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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,333	08/29/2003	Daniel M. Castagnozzi	applied_157	1621
29397	7590	01/17/2007	EXAMINER	
LAW OFFICE OF GERALD MALISZEWSKI P.O. BOX 270829 SAN DIEGO, CA 92198-2829			TORRES, JUAN A	
			ART UNIT	PAPER NUMBER
			2611	
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
2 MONTHS	01/17/2007	PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/652,333	CASTAGNOZZI ET AL.	
	Examiner	Art Unit	
	Juan A. Torres	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 29 August 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) _____ is/are rejected.
- 7) Claim(s) 1-24 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 29 August 2003 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, a modified gain method for non-causal channel equalization using feed-forward and feedback compensation, the method comprising receiving a first bit (present) input; comparing a second bit (past) value, received prior to the first bit input, to a third bit (future) value received subsequent to the first bit input; in response to the comparisons, modifying the amplitude of the first bit input; and, determining the value of the first bit input. must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

The drawings are objected to because the quality of figures 3-6 and 8-10 is very poor. It is suggested to replace these drawings with a appropriated quality drawings similar to those in figures 1 and 2.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering

of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 1-24 are objected to because of the following informalities:

As per claims 1, 2, 9, 11 and 22, claims 1, 2, 9, 11 and 22 are objected to because the improper use of the parentheses. Claims 1, 2, 9, 11 and 22 include limitations which are enclosed within parentheses; limitations which are enclosed within parentheses are not given patentability weight; it is suggested to be deleted the parentheses appropriately to avoid the lack of antecedent basic and rejections under 35 USC § 112 second paragraph.

As per claims 2-10 and 12-24 are objected because they depend directly or indirectly from claims 1 and 11 respectively, and claims 1 and 11 are objected.

Claims 5-10 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

As per claim 5, claim 5 claims that "modifying the amplitude of the first bit input includes supplying a low amplitude modifier in response to both the second and third bit values being a "1" value", but claim 5 depends from claim 4, and claim 4 claims that

"modifying the amplitude of the first bit input includes supplying a unity amplitude modifier in response to only one of the second and third bit values being a "1" value" (emphasis added), so claim 5 is not further limiting claim 4.

As per claim 6, claim 6 claims that "modifying the amplitude of the first bit input includes supplying a high amplitude modifier in response to both the second and third bit values being a "1" value", but claim 6 depends from claim 5, and claim 5 claims that "modifying the amplitude of the first bit input includes supplying a low amplitude modifier in response to both the second and third bit values being a "1" value" (emphasis added), so claim 6 is not further limiting claim 5.

As per claims 7-10, they are objected because they depend directly or indirectly from claims 5 and 6 and claims 5 and 6 are objected.

It is suggested to change the dependency of claims 5, 6 and 7 to depend directly or indirectly from claim 4 in an appropriate way, making sure that the 35 USC 112 of antecedent basics are not violated.

Claims 16, 17, 22 and 23 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

As per claim 16, claim 16 claims that "the calculator circuit supplies a low amplitude modifier signal in response to both the second and third bit values being a "1" value", but claim 16 depends from claim 15, and claim 15 claims that "the calculator circuit supplies a unity amplitude modifier signal in response to the only one of the

second and third bit values being a "1" value" (emphasis added), so claim 16 is not further limiting claim 15.

As per claim 17, claim 17 claims that "the calculator circuit supplies a high amplitude modifier signal in response to both the second and third bit values being a "0" value", but claim 17 depends from claim 16, and claim 16 claims that "the calculator circuit supplies a low amplitude modifier signal in response to both the second and third bit values being a "1" value" (emphasis added), so claim 17 is not further limiting claim 16.

As per claims 22 and 23, they are objected because they depend directly or indirectly from claims 16 and 17 and claims 16 and 17 are objected.

It is suggested to change the dependency of claims 16 and 17 to depend from claim 14 in an appropriate way, making sure that the 35 USC 112 of antecedent basics are not violated.

Appropriate correction is required.

Allowable Subject Matter

Claims 1-24 are allowed (if the above objections are overcome).

The following is an examiner's statement of reasons for allowance: claims 1-24 are allowed because the references cited fail to teach, as applicant has, receiving a first bit present input, comparing a second bit past value, received prior to the first bit input, to a third bit future value received subsequent to the first bit input, in response to the comparisons, modifying the amplitude of the first bit input, and, determining the value of the first bit input; and a modified gain decision circuit having an input to accept a serial

data stream, an input to accept a second bit past value received prior to a first bit present input, an input to accept a third bit future value received subsequent to the first bit input, and an output to supply a first bit value responsive to the second and third bit values, a feed-forward equalizer having an input to accept the serial data stream and an output to supply third bit values, and, a feedback equalizer having an input to accept first bit values and an output to supply second bit values, as the applicant has claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Oler (US 6031866 A) discloses equalization of two-way digital communications between a base and portable unit is described across a non-causal linear time dispersive and possibly time varying channel. Nobakht (US 5539774 A) discloses performing adaptive dual decision equalization in a communications system. Leung (US 6493329 B1) discloses an adaptive non-causal channel estimator. Oler, Nobakht and Leung don't disclose comparing a second bit past value, received prior to the first bit input, to a third bit future value received subsequent to the first bit input, in response to the comparisons, modifying the amplitude of the first bit input, and, determining the value of the first bit input; and a modified gain decision circuit having an input to accept a serial data stream, an input to accept a second bit past value received

prior to a first bit present input, an input to accept a third bit future value received subsequent to the first bit input, and an output to supply a first bit value responsive to the second and third bit values.

This application is in condition for allowance except for the following formal matters:

See above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

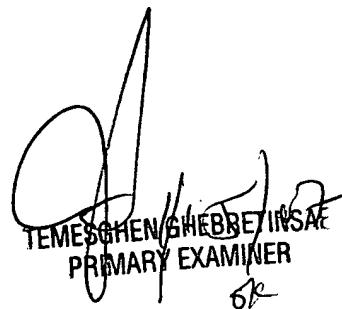
A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan A. Torres whose telephone number is (571) 272-3119. The examiner can normally be reached on Monday-Friday 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Juan Alberto Torres
10-04-2006



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PRIMARY EXAMINER
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